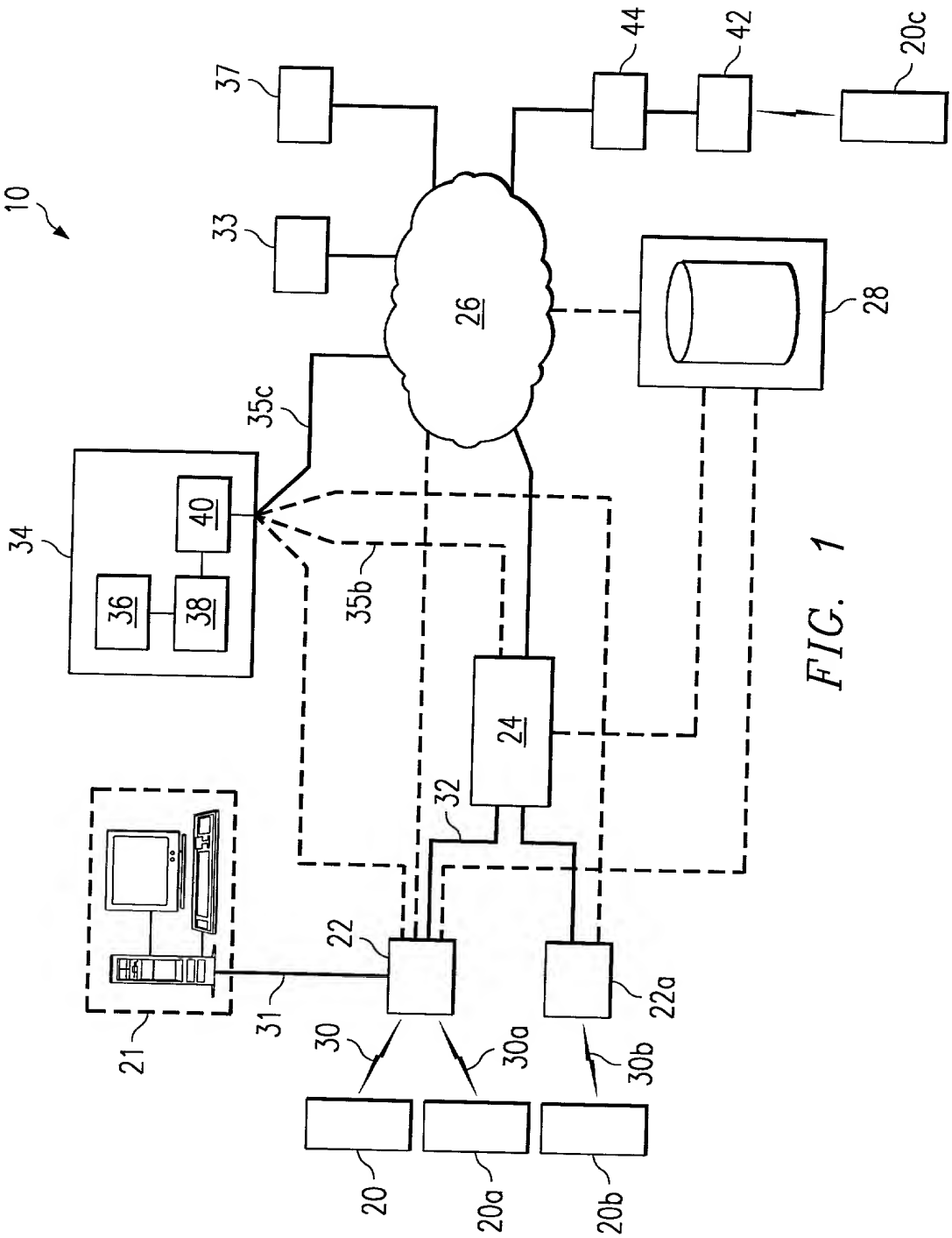

10
37
33
44
42
20c
26
28
35c
34
40
36
38
35b
24
32
22
22a
21
31
30
30a
30b
20
20a
20b

FIG. 1

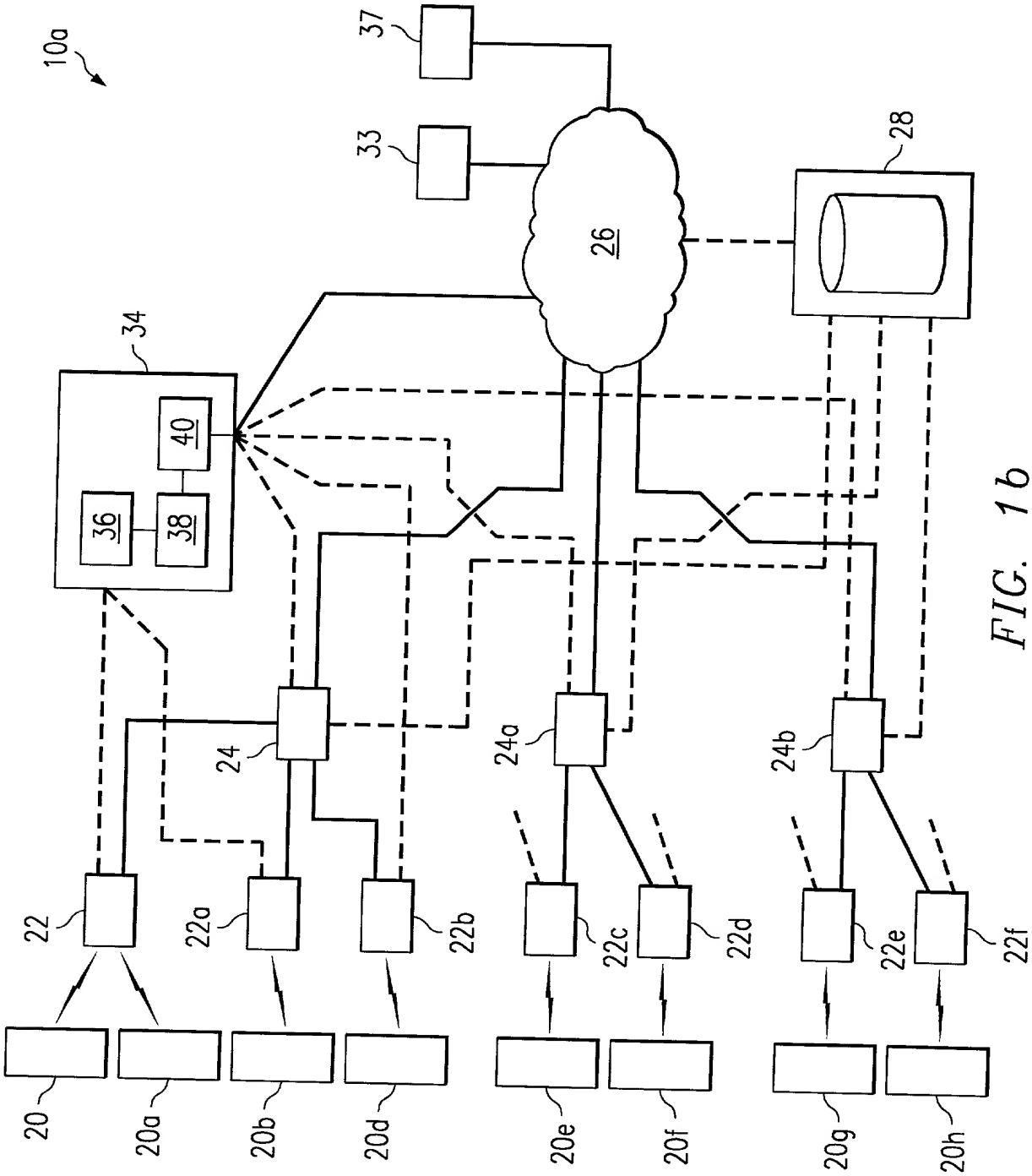

10a
37
33
26
28
34
40
36
38
24
24a
24b
22
22a
22b
22c
22d
22e
22f
20
20a
20b
20d
20e
20f
20g
20h

FIG. 1b

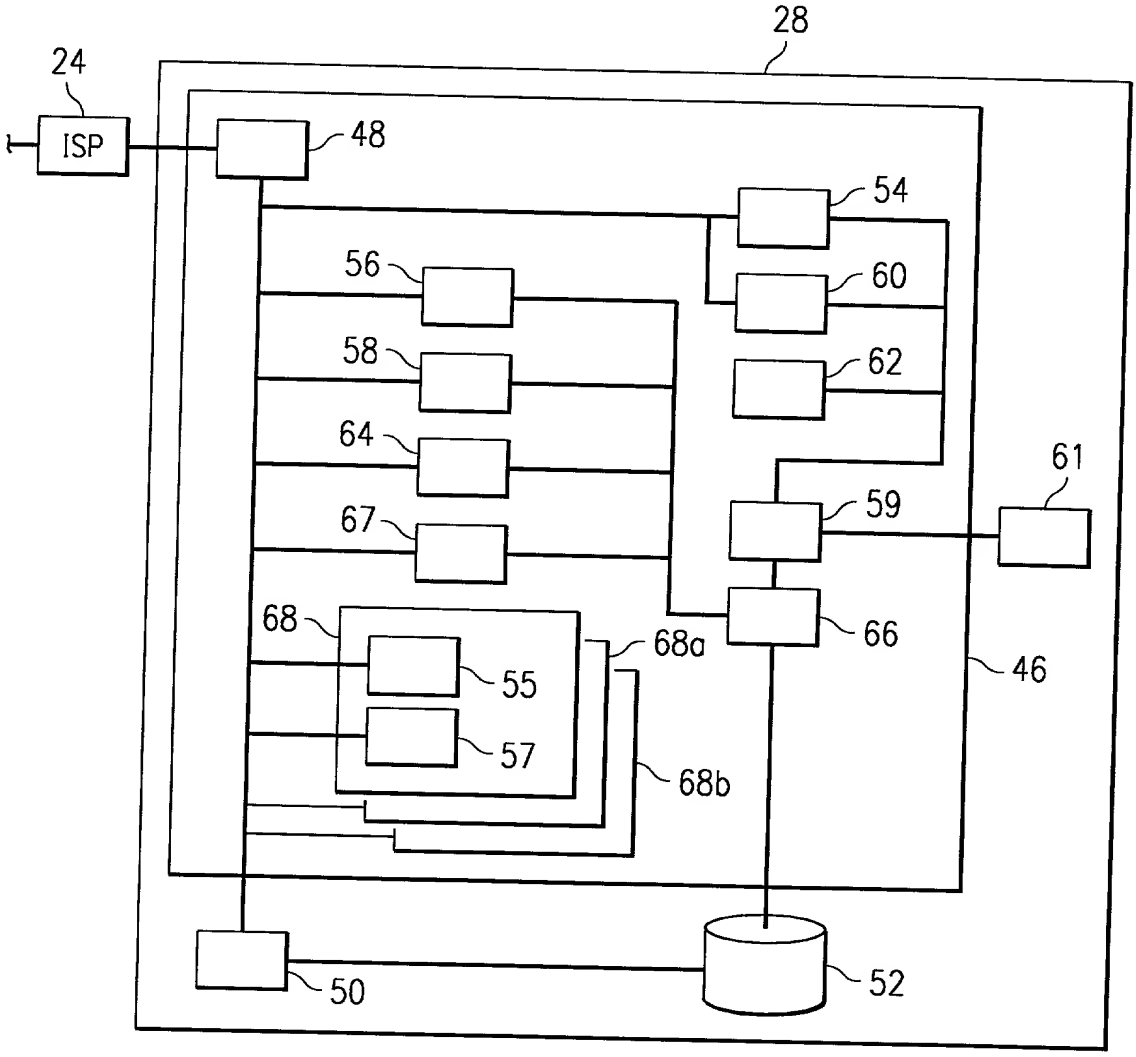

28
24
ISP
48
54
56
60
58
62
64
61
67
59
68
66
68a
46
55
57
68b
50
52

FIG. 2

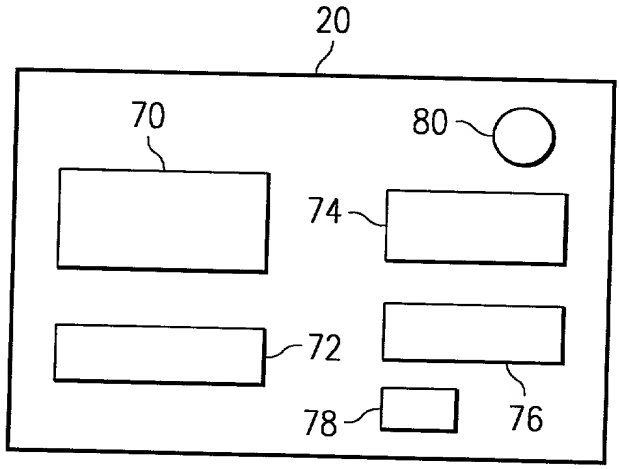

20
70
80
74
72
78
76

FIG. 3

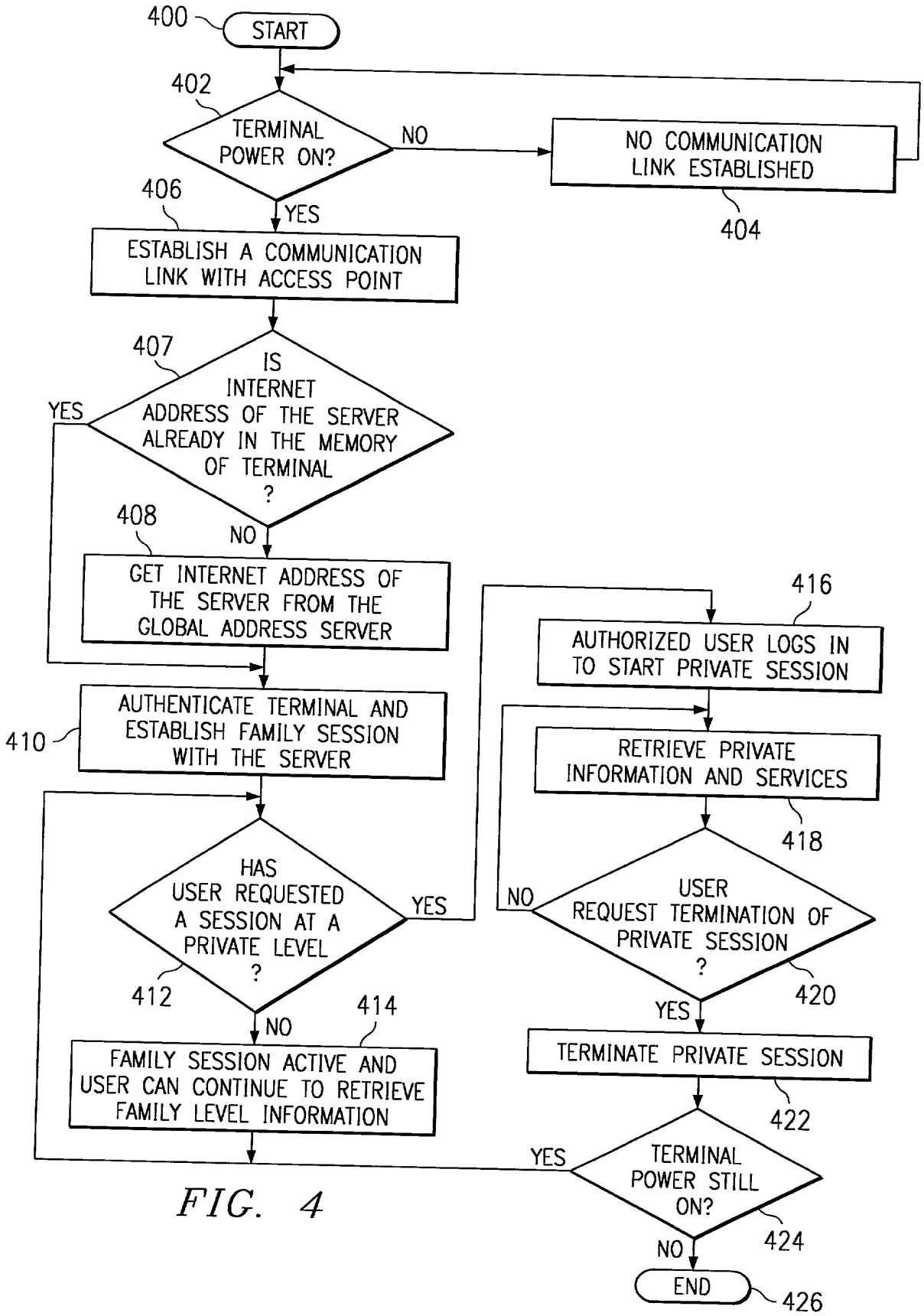

400
START
402
TERMINAL POWER ON?
NO
NO COMMUNICATION LINK ESTABLISHED
404
YES
406
ESTABLISH A COMMUNICATION LINK WITH ACCESS POINT
407
IS INTERNET ADDRESS OF THE SERVER ALREADY IN THE MEMORY OF TERMINAL ?
YES
NO
408
GET INTERNET ADDRESS OF THE SERVER FROM THE GLOBAL ADDRESS SERVER
410
AUTHENTICATE TERMINAL AND ESTABLISH FAMILY SESSION WITH THE SERVER
HAS USER REQUESTED A SESSION AT A PRIVATE LEVEL ?
YES
412
NO
414
FAMILY SESSION ACTIVE AND USER CAN CONTINUE TO RETRIEVE FAMILY LEVEL INFORMATION
416
AUTHORIZED USER LOGS IN TO START PRIVATE SESSION
RETRIEVE PRIVATE INFORMATION AND SERVICES
418
USER REQUEST TERMINATION OF PRIVATE SESSION ?
NO
YES
420
TERMINATE PRIVATE SESSION
422
TERMINAL POWER STILL ON?
YES
NO
424
END
426

FIG. 4

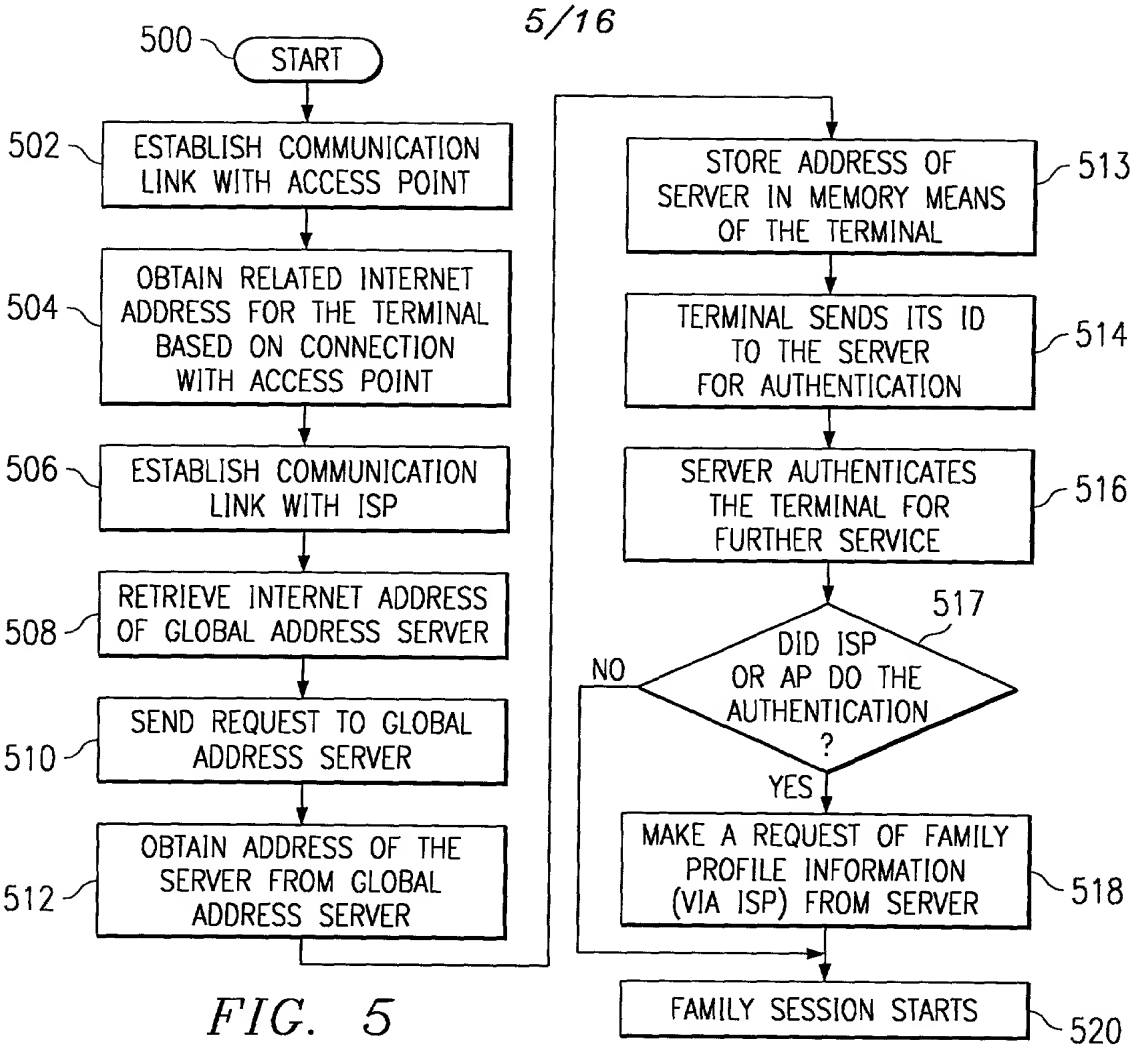

500
START
502
ESTABLISH COMMUNICATION LINK WITH ACCESS POINT
504
OBTAIN RELATED INTERNET ADDRESS FOR THE TERMINAL BASED ON CONNECTION WITH ACCESS POINT
506
ESTABLISH COMMUNICATION LINK WITH ISP
508
RETRIEVE INTERNET ADDRESS OF GLOBAL ADDRESS SERVER
510
SEND REQUEST TO GLOBAL ADDRESS SERVER
512
OBTAIN ADDRESS OF THE SERVER FROM GLOBAL ADDRESS SERVER
513
STORE ADDRESS OF SERVER IN MEMORY MEANS OF THE TERMINAL
514
TERMINAL SENDS ITS ID TO THE SERVER FOR AUTHENTICATION
516
SERVER AUTHENTICATES THE TERMINAL FOR FURTHER SERVICE
517
DID ISP OR AP DO THE AUTHENTICATION ?
NO
YES
518
MAKE A REQUEST OF FAMILY PROFILE INFORMATION (VIA ISP) FROM SERVER
520
FAMILY SESSION STARTS

FIG. 5

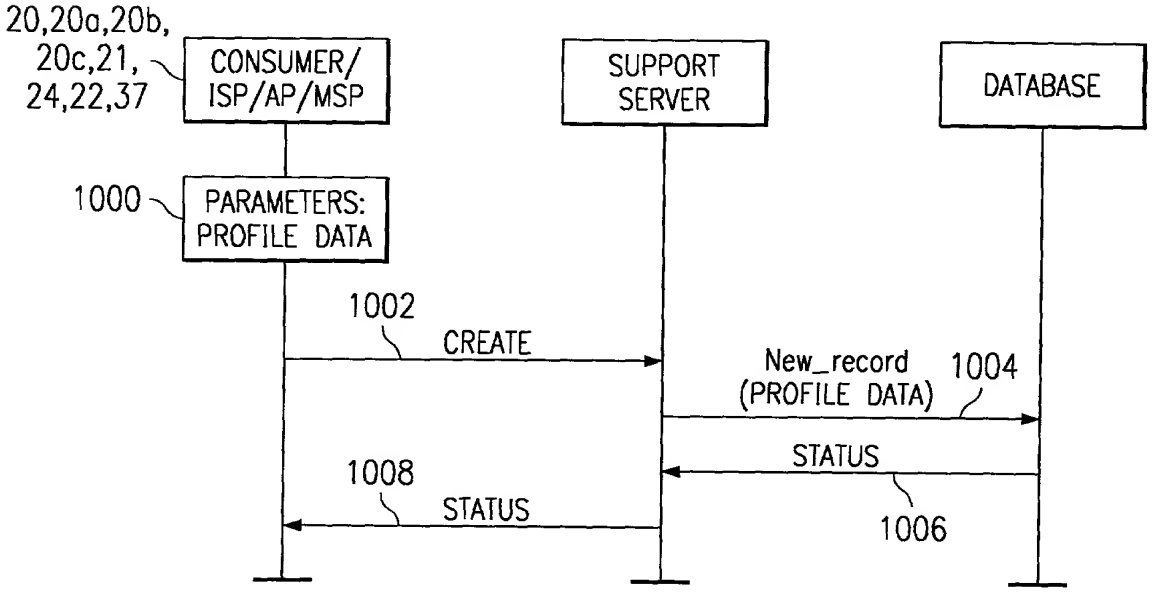

20,20a,20b, 20c,21, 24,22,37
CONSUMER/ ISP/AP/MSP
SUPPORT SERVER
DATABASE
1000
PARAMETERS: PROFILE DATA
1002
CREATE
New_record (PROFILE DATA)
1004
STATUS
1006
1008
STATUS

FIG. 7

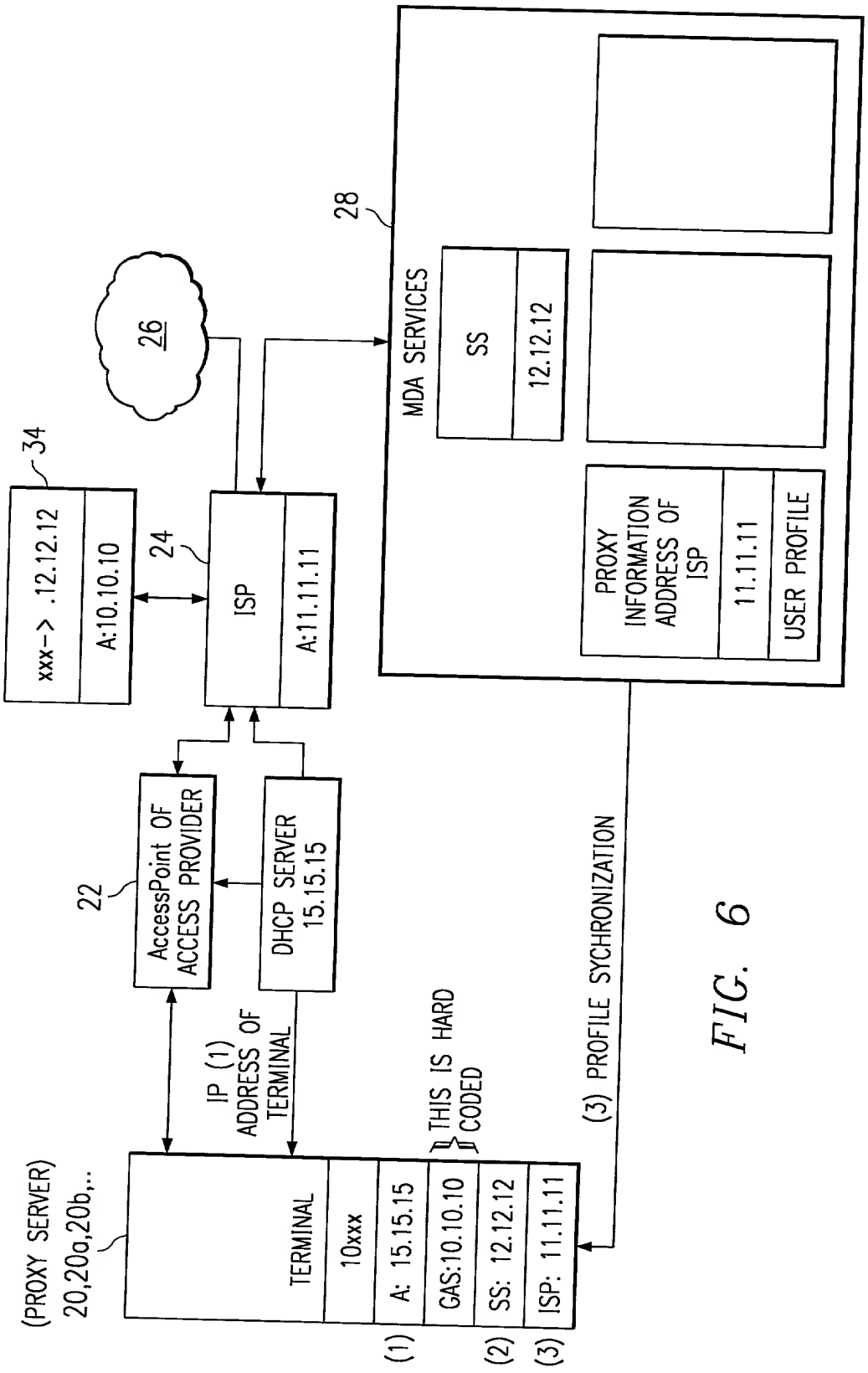

(PROXY SERVER)
20,20a,20b,..
TERMINAL
10xxx
A: 15.15.15
GAS:10.10.10
SS: 12.12.12
ISP: 11.11.11
(1)
(2)
(3)
IP (1) ADDRESS OF TERMINAL
THIS IS HARD CODED
(3) PROFILE SYCHRONIZATION
22
AccessPoint OF ACCESS PROVIDER
DHCP SERVER 15.15.15
24
ISP
A:11.11.11
34
xxx-> .12.12.12
A:10.10.10
26
28
MDA SERVICES
SS
12.12.12
PROXY INFORMATION ADDRESS OF ISP
11.11.11
USER PROFILE

FIG. 6

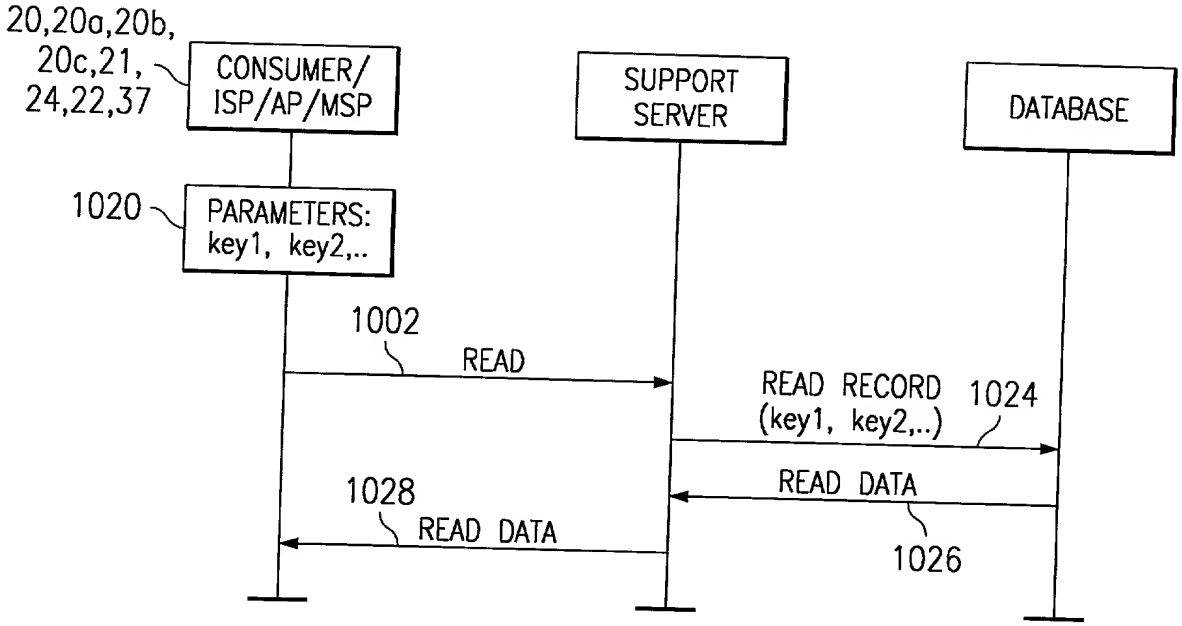

20,20a,20b,
20c,21,
24,22,37
CONSUMER/
ISP/AP/MSP
SUPPORT
SERVER
DATABASE
1020
PARAMETERS:
key1, key2,..
1002
READ
READ RECORD
(key1, key2,..)
1024
READ DATA
1028
READ DATA
1026

FIG. 8

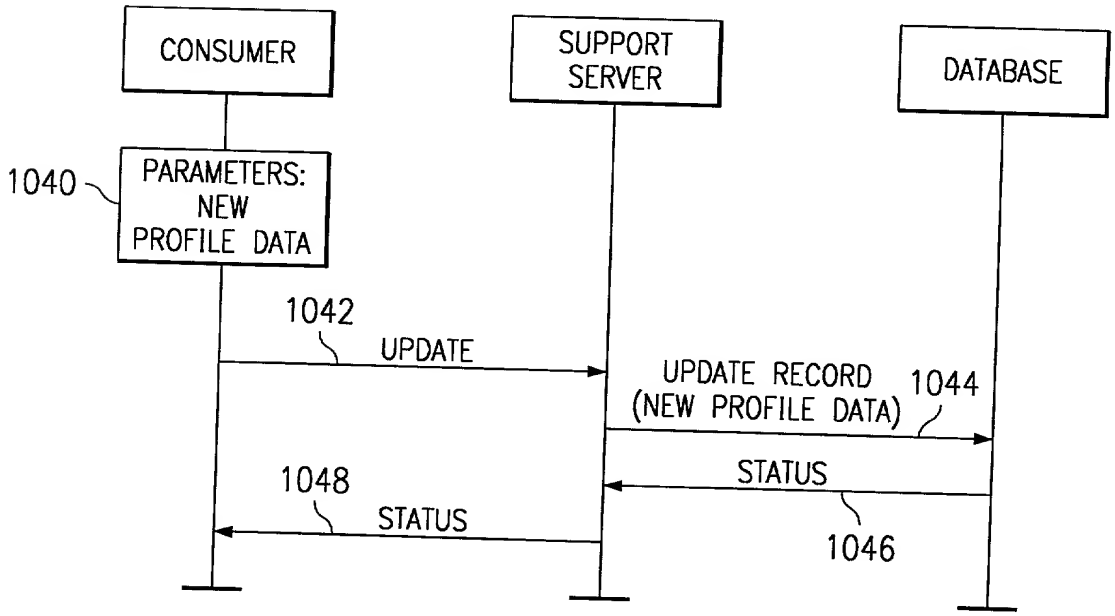

CONSUMER
SUPPORT
SERVER
DATABASE
1040
PARAMETERS:
NEW
PROFILE DATA
1042
UPDATE
UPDATE RECORD
(NEW PROFILE DATA)
1044
STATUS
1048
STATUS
1046

FIG. 9

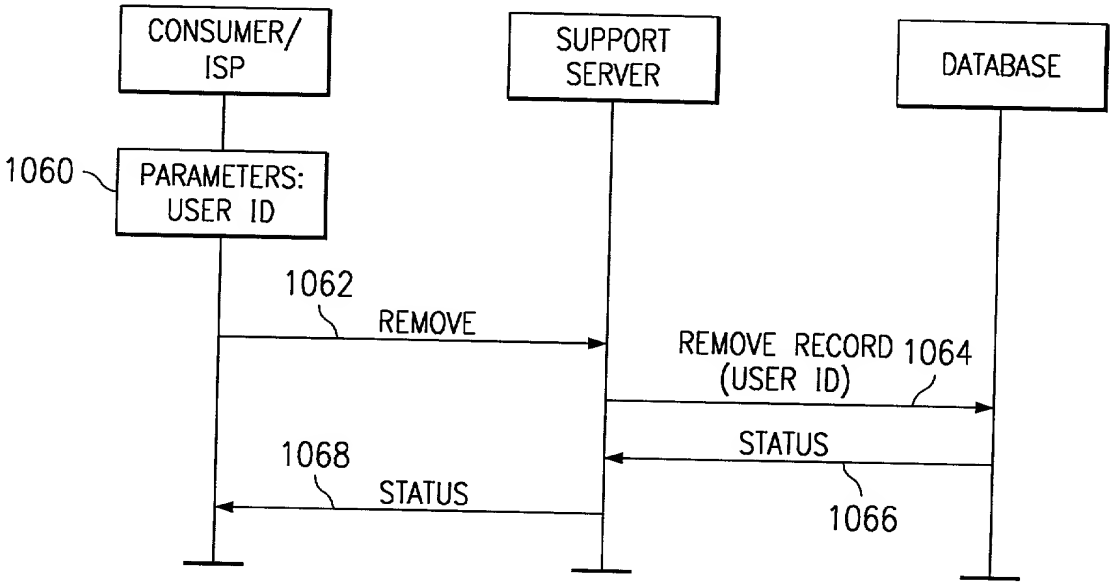

CONSUMER/ ISP
SUPPORT SERVER
DATABASE
1060
PARAMETERS: USER ID
1062
REMOVE
REMOVE RECORD (USER ID)
1064
STATUS
1068
STATUS
1066

FIG. 10

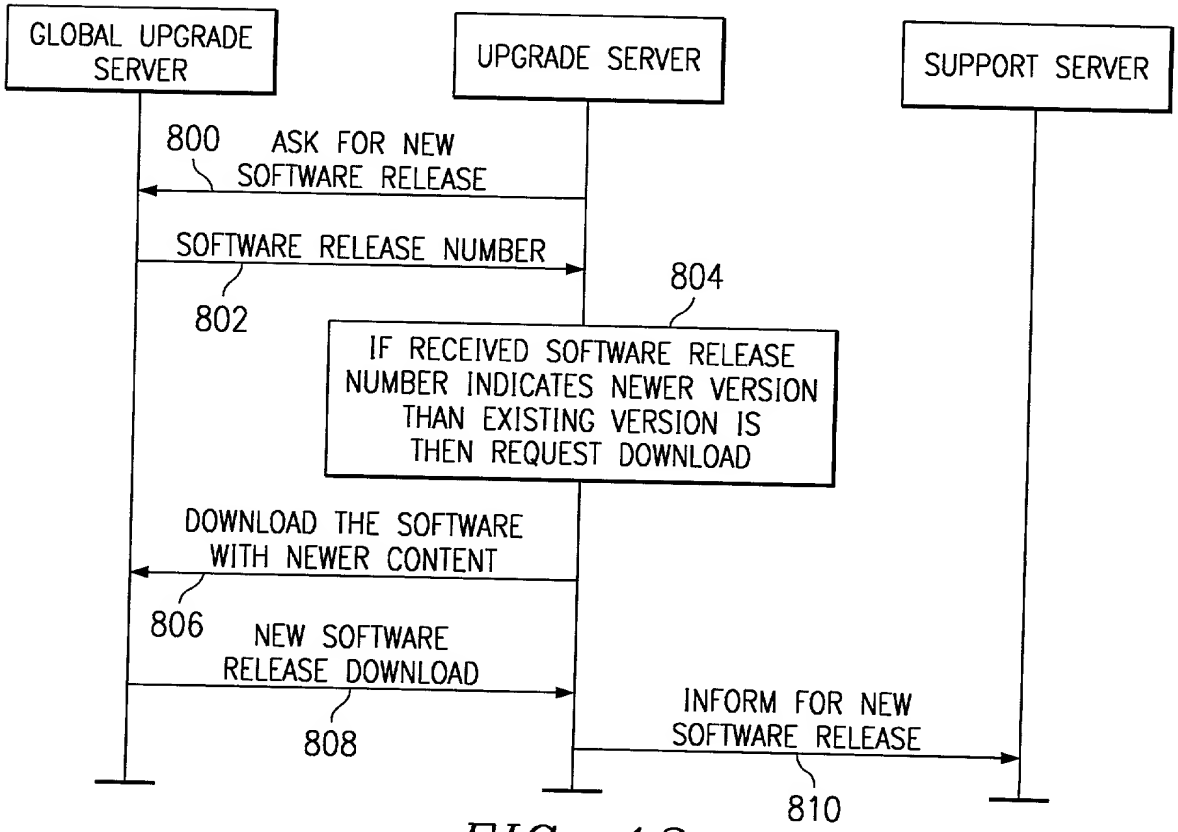

GLOBAL UPGRADE SERVER
UPGRADE SERVER
SUPPORT SERVER
800
ASK FOR NEW SOFTWARE RELEASE
SOFTWARE RELEASE NUMBER
802
804
IF RECEIVED SOFTWARE RELEASE NUMBER INDICATES NEWER VERSION THAN EXISTING VERSION IS THEN REQUEST DOWNLOAD
DOWNLOAD THE SOFTWARE WITH NEWER CONTENT
806
NEW SOFTWARE RELEASE DOWNLOAD
808
INFORM FOR NEW SOFTWARE RELEASE
810

FIG. 13

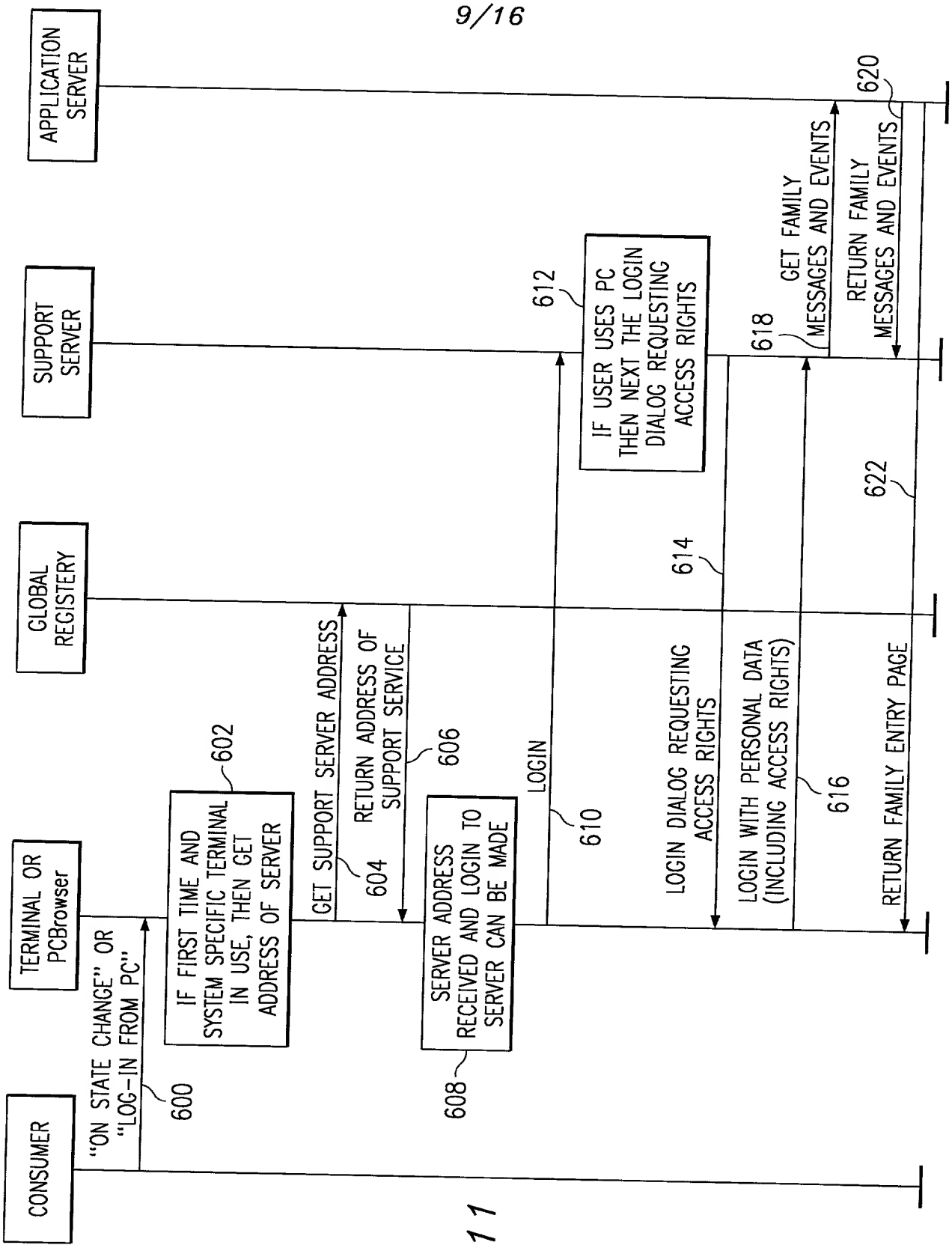

CONSUMER
TERMINAL OR PCBrowser
GLOBAL REGISTERY
SUPPORT SERVER
APPLICATION SERVER
"ON STATE CHANGE" OR "LOG-IN FROM PC"
600
IF FIRST TIME AND SYSTEM SPECIFIC TERMINAL IN USE, THEN GET ADDRESS OF SERVER
602
GET SUPPORT SERVER ADDRESS
604
RETURN ADDRESS OF SUPPORT SERVICE
606
SERVER ADDRESS RECEIVED AND LOGIN TO SERVER CAN BE MADE
608
LOGIN
610
IF USER USES PC THEN NEXT THE LOGIN DIALOG REQUESTING ACCESS RIGHTS
612
LOGIN DIALOG REQUESTING ACCESS RIGHTS
614
LOGIN WITH PERSONAL DATA (INCLUDING ACCESS RIGHTS)
616
GET FAMILY MESSAGES AND EVENTS
618
RETURN FAMILY MESSAGES AND EVENTS
620
RETURN FAMILY ENTRY PAGE
622

FIG. 11

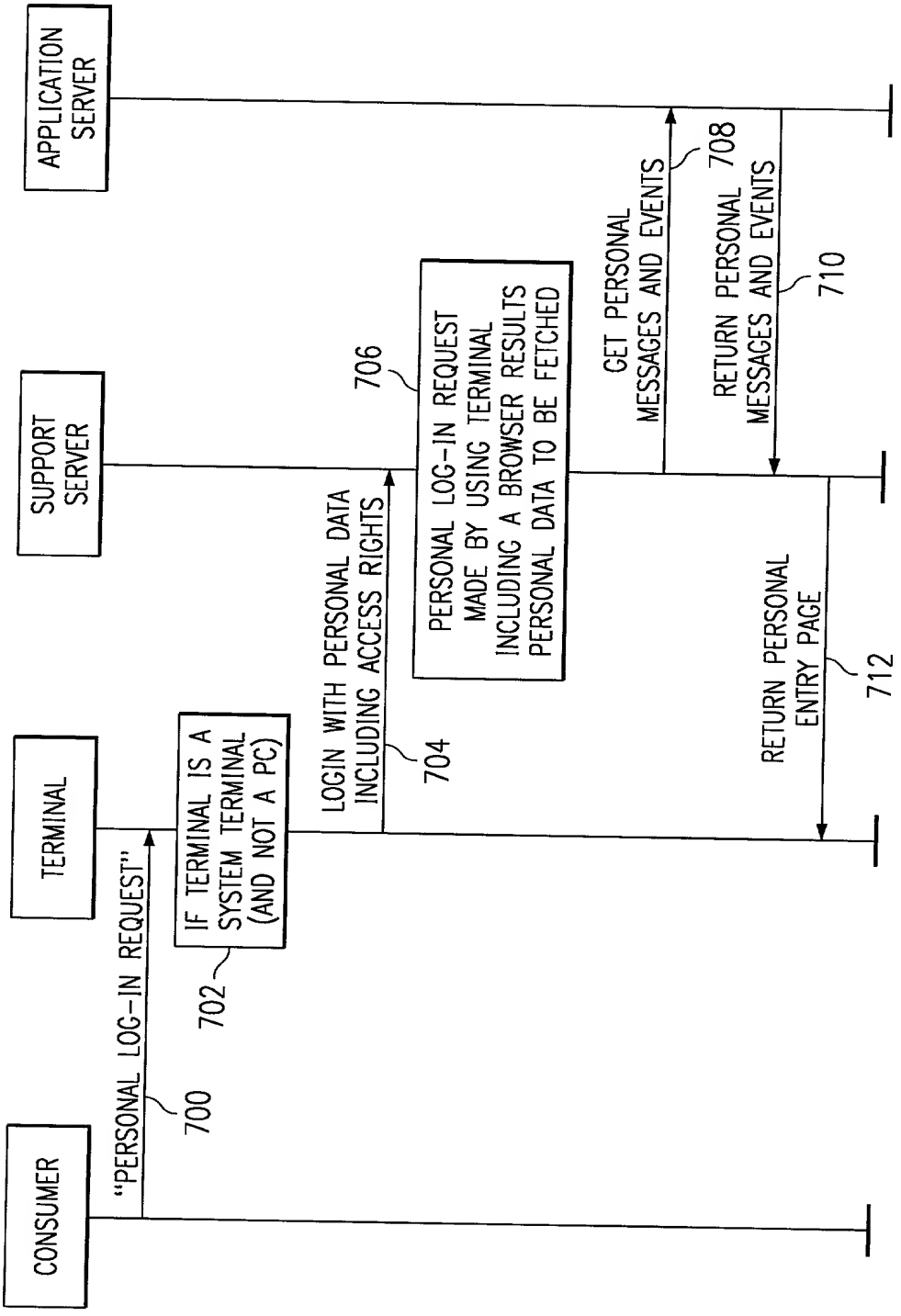

CONSUMER
TERMINAL
SUPPORT SERVER
APPLICATION SERVER
"PERSONAL LOG-IN REQUEST"
700
IF TERMINAL IS A SYSTEM TERMINAL (AND NOT A PC)
702
LOGIN WITH PERSONAL DATA INCLUDING ACCESS RIGHTS
704
PERSONAL LOG-IN REQUEST MADE BY USING TERMINAL INCLUDING A BROWSER RESULTS PERSONAL DATA TO BE FETCHED
706
GET PERSONAL MESSAGES AND EVENTS
708
RETURN PERSONAL MESSAGES AND EVENTS
710
RETURN PERSONAL ENTRY PAGE
712

FIG. 12

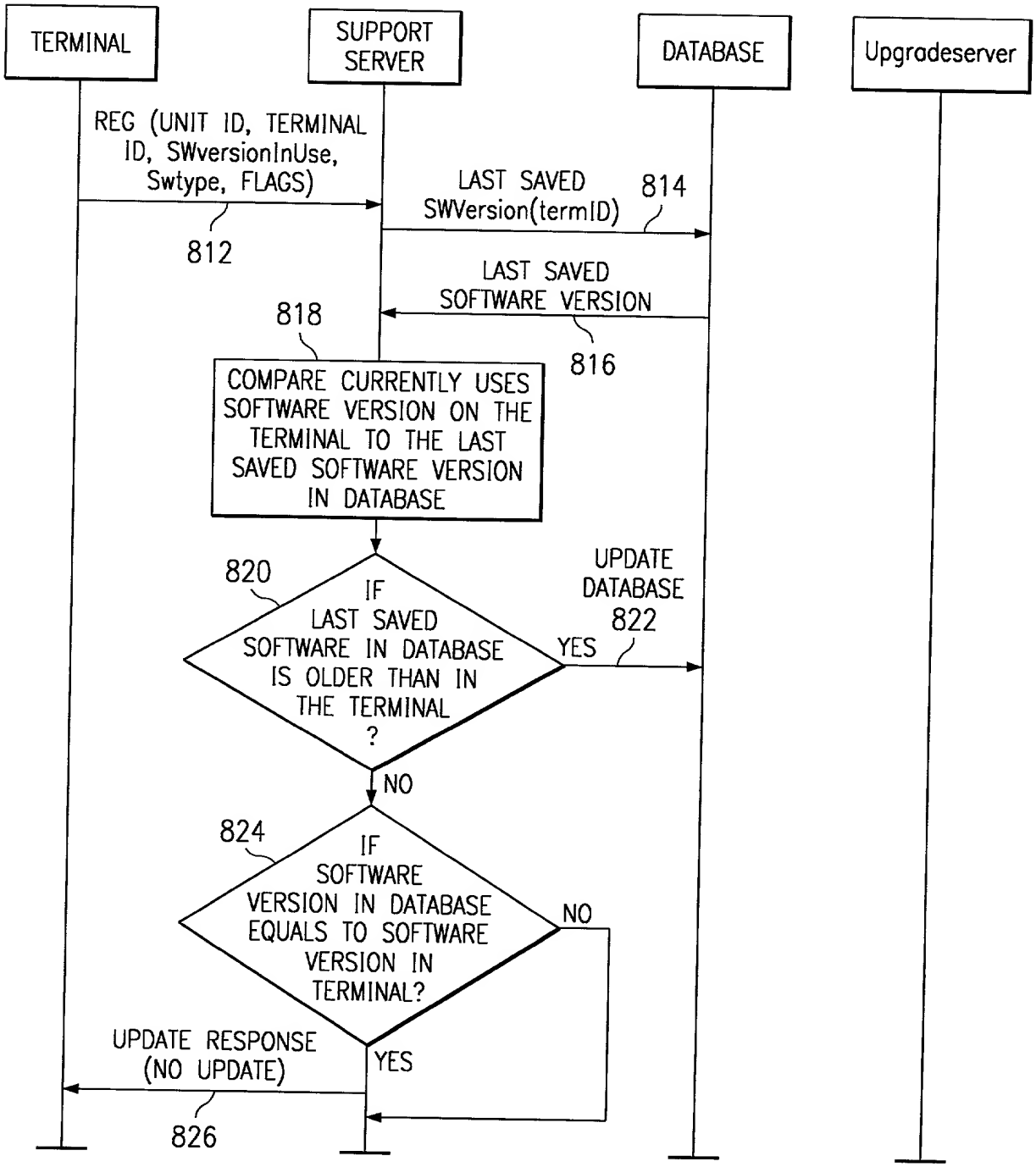

TERMINAL
SUPPORT SERVER
DATABASE
Upgradeserver
REG (UNIT ID, TERMINAL ID, SWversionInUse, Swtype, FLAGS)
812
LAST SAVED SWVersion(termID)
814
LAST SAVED SOFTWARE VERSION
816
818
COMPARE CURRENTLY USES SOFTWARE VERSION ON THE TERMINAL TO THE LAST SAVED SOFTWARE VERSION IN DATABASE
820
IF LAST SAVED SOFTWARE IN DATABASE IS OLDER THAN IN THE TERMINAL ?
YES
UPDATE DATABASE
822
NO
824
IF SOFTWARE VERSION IN DATABASE EQUALS TO SOFTWARE VERSION IN TERMINAL?
NO
YES
UPDATE RESPONSE (NO UPDATE)
826

FIG. 14A

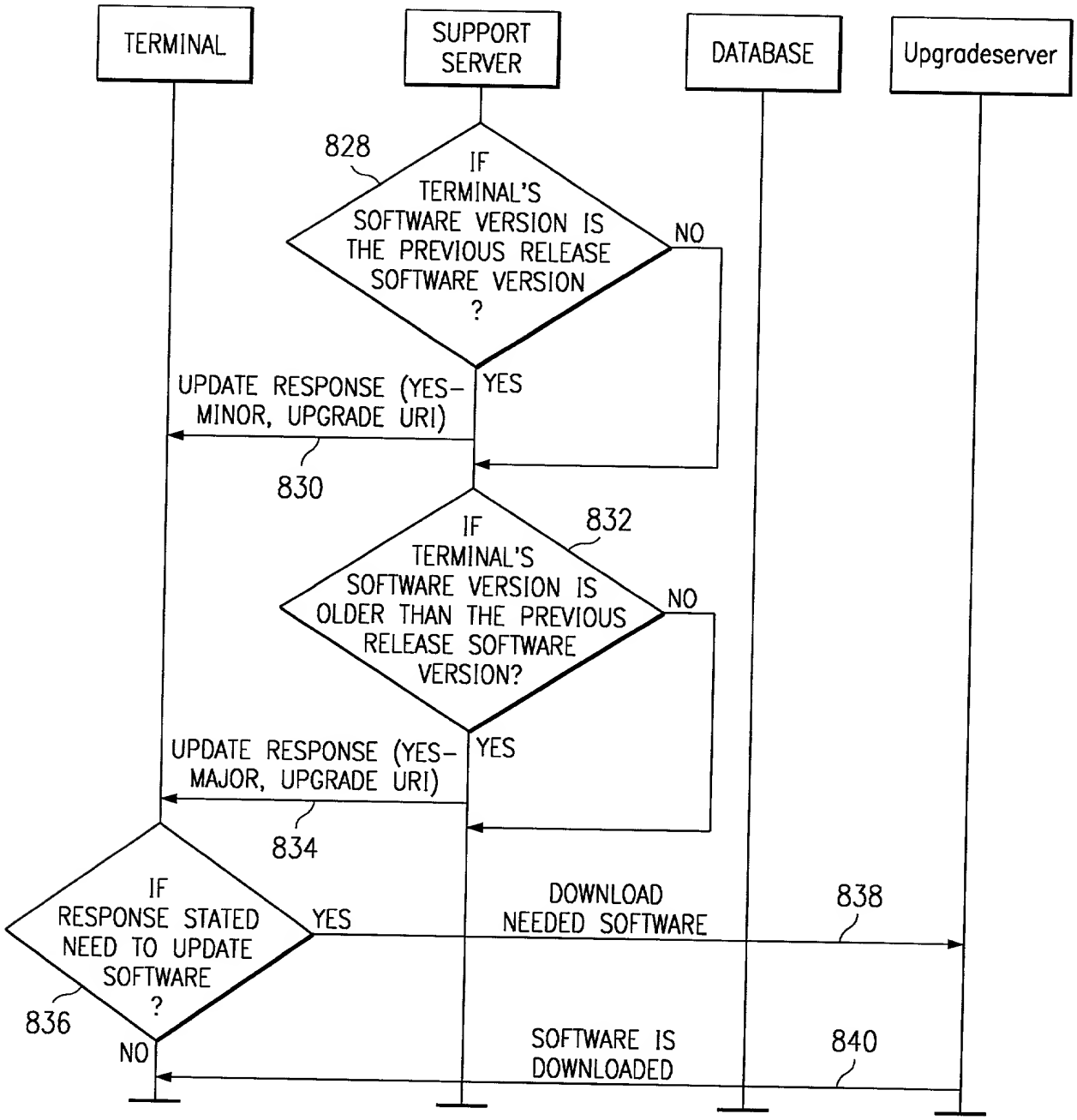

TERMINAL
SUPPORT SERVER
DATABASE
Upgradeserver
828
IF TERMINAL'S SOFTWARE VERSION IS THE PREVIOUS RELEASE SOFTWARE VERSION ?
NO
YES
UPDATE RESPONSE (YES-MINOR, UPGRADE URI)
830
832
IF TERMINAL'S SOFTWARE VERSION IS OLDER THAN THE PREVIOUS RELEASE SOFTWARE VERSION?
NO
YES
UPDATE RESPONSE (YES-MAJOR, UPGRADE URI)
834
IF RESPONSE STATED NEED TO UPDATE SOFTWARE ?
YES
DOWNLOAD NEEDED SOFTWARE
838
836
NO
SOFTWARE IS DOWNLOADED
840

FIG. 14B

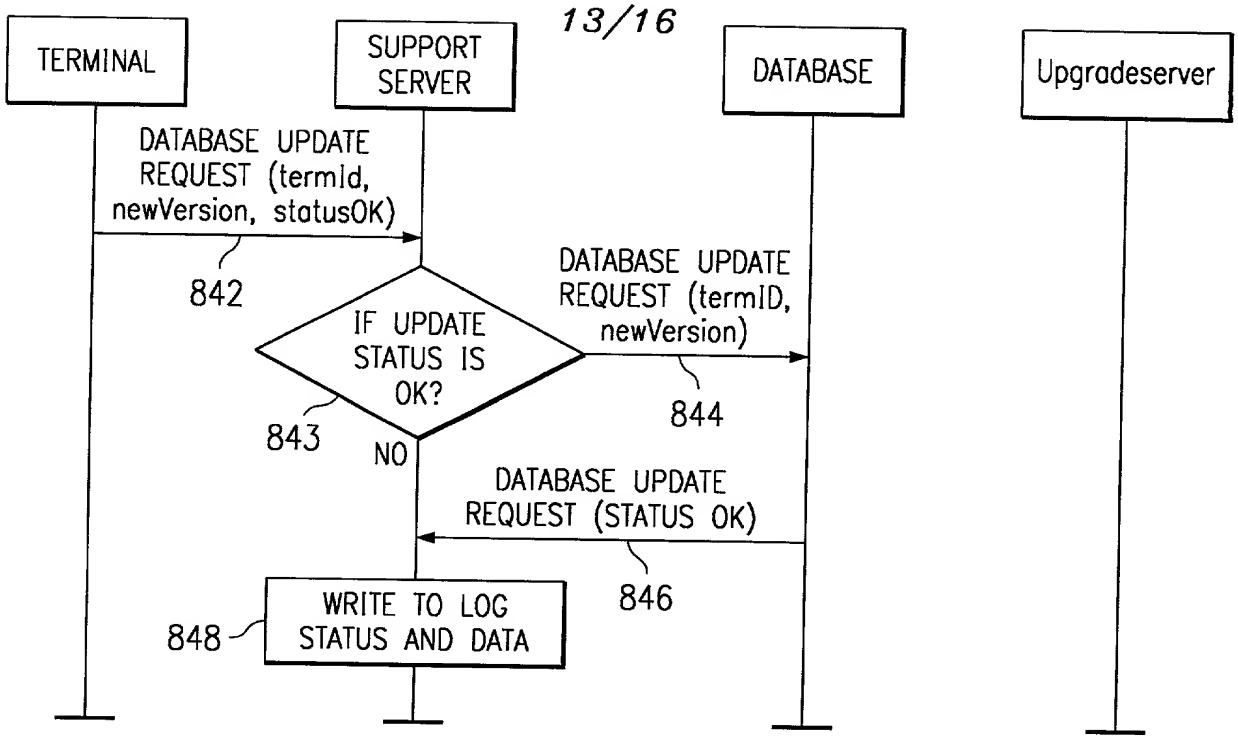


FIG. 14C

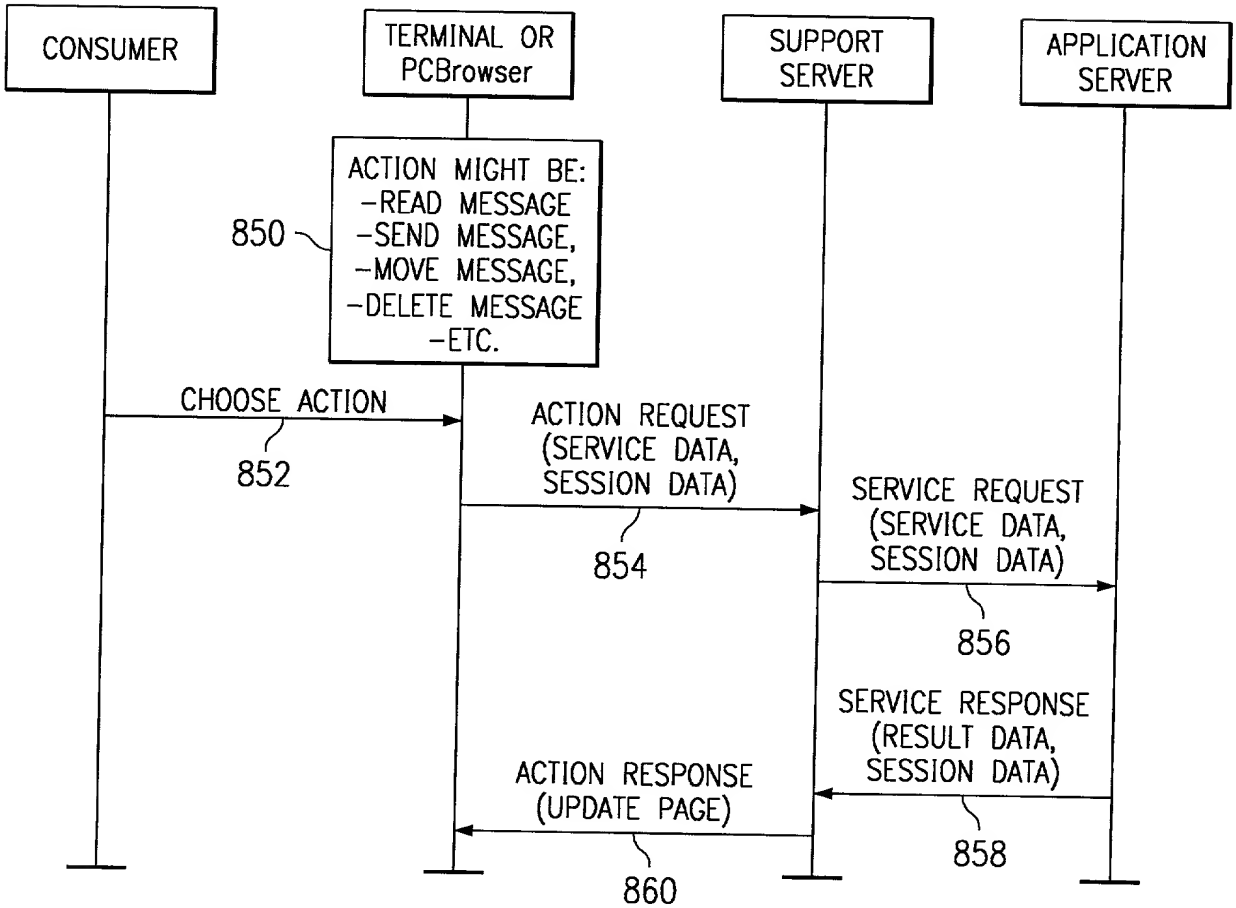


FIG. 15

FIG. 16

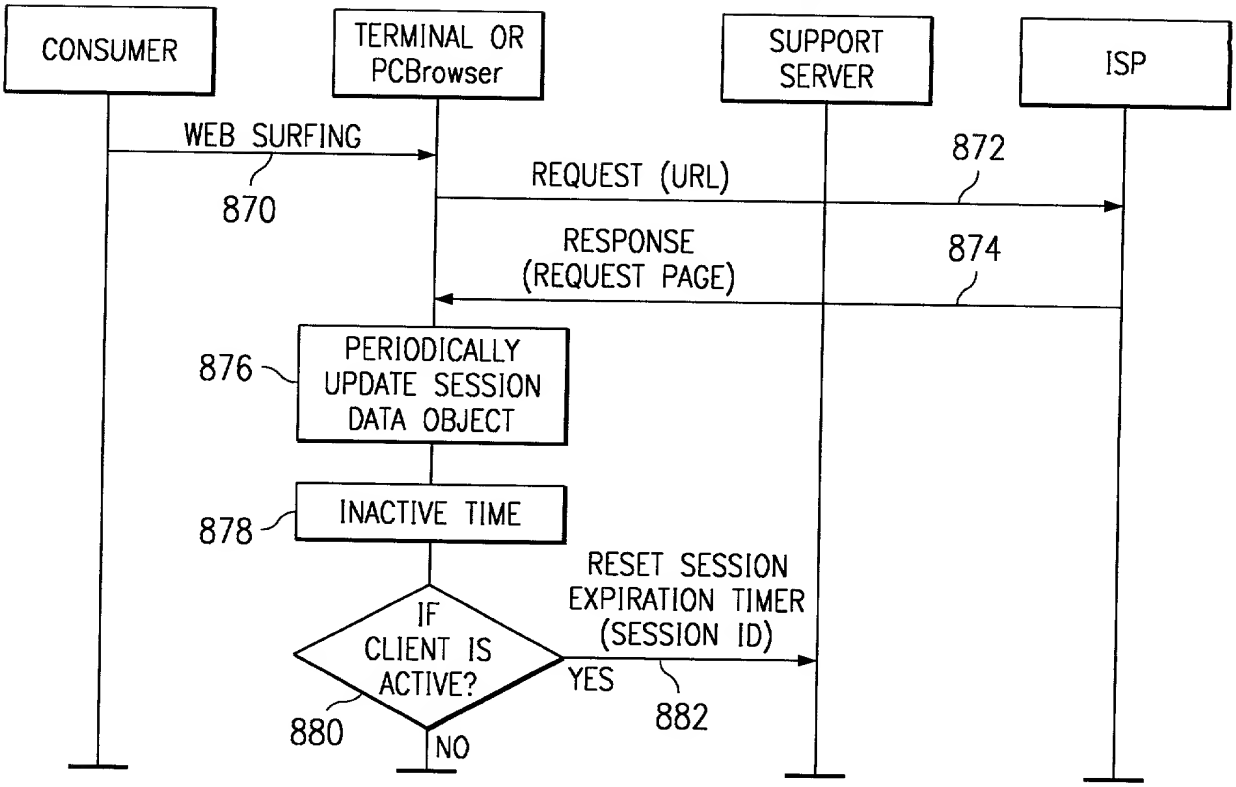
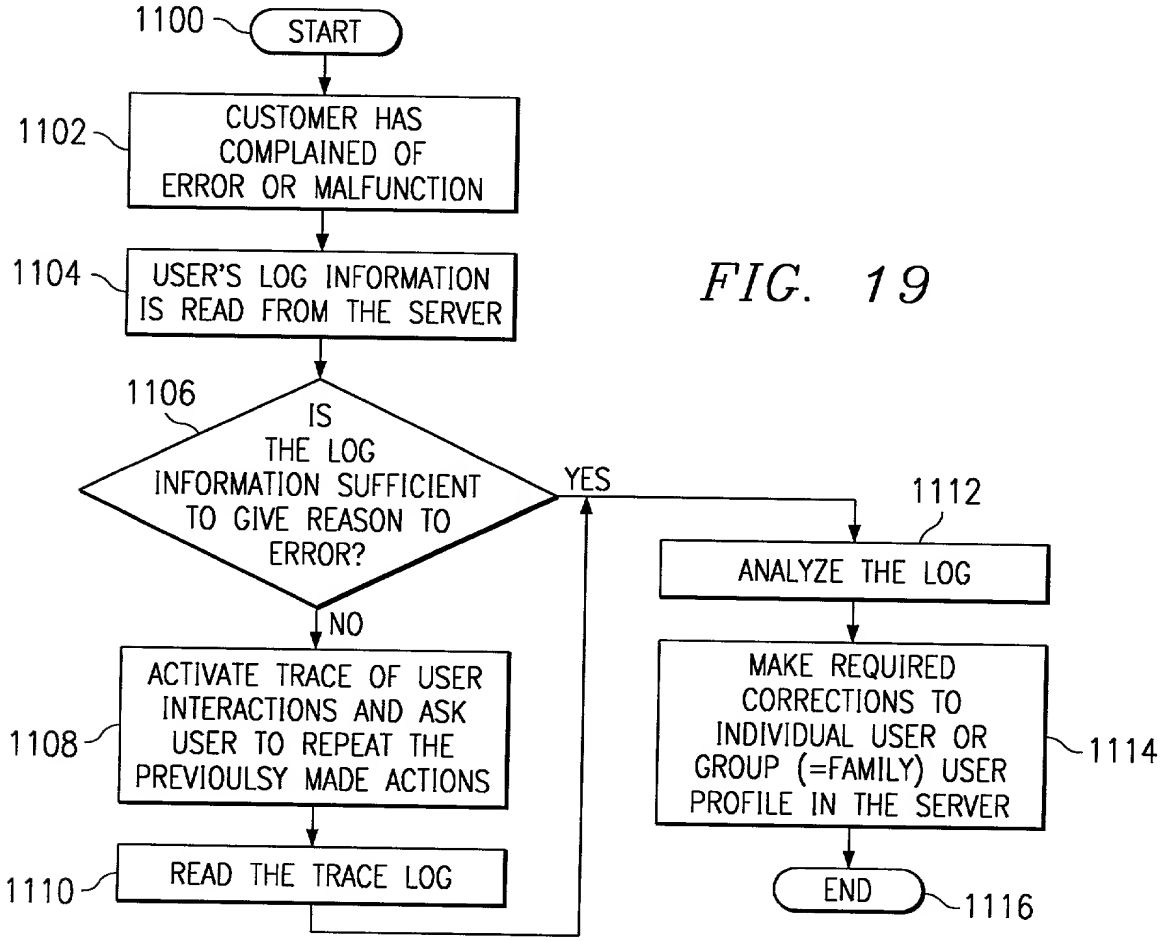

CONSUMER
TERMINAL OR PCBrowser
SUPPORT SERVER
ISP
WEB SURFING
870
REQUEST (URL)
872
RESPONSE (REQUEST PAGE)
874
876
PERIODICALLY UPDATE SESSION DATA OBJECT
878
INACTIVE TIME
IF CLIENT IS ACTIVE?
880
YES
NO
RESET SESSION EXPIRATION TIMER (SESSION ID)
882

FIG. 19


1100
START
1102
CUSTOMER HAS COMPLAINED OF ERROR OR MALFUNCTION
1104
USER'S LOG INFORMATION IS READ FROM THE SERVER
1106
IS THE LOG INFORMATION SUFFICIENT TO GIVE REASON TO ERROR?
YES
NO
1108
ACTIVATE TRACE OF USER INTERACTIONS AND ASK USER TO REPEAT THE PREVIOULSY MADE ACTIONS
1110
READ THE TRACE LOG
1112
ANALYZE THE LOG
MAKE REQUIRED CORRECTIONS TO INDIVIDUAL USER OR GROUP (=FAMILY) USER PROFILE IN THE SERVER
1114
END
1116

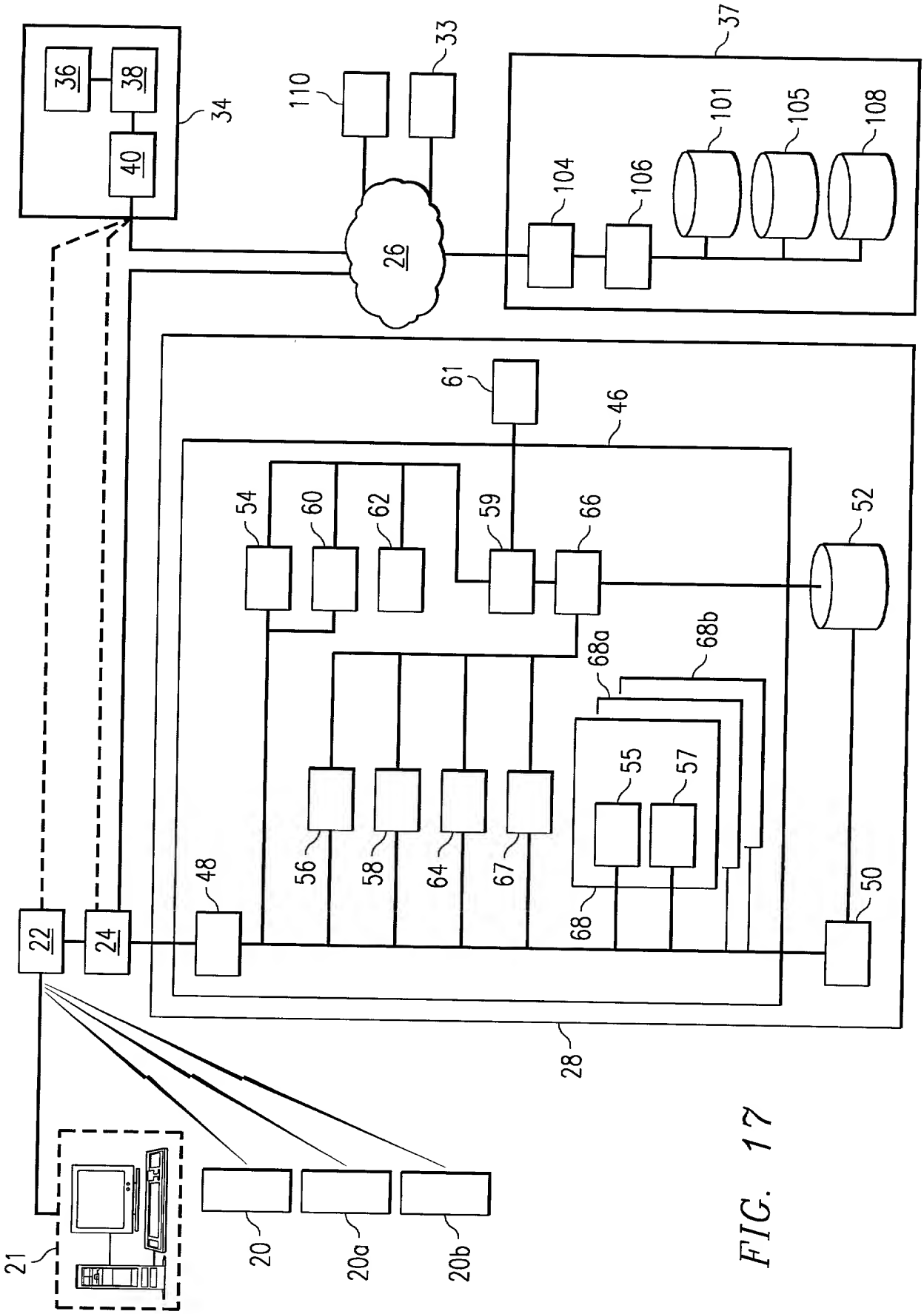
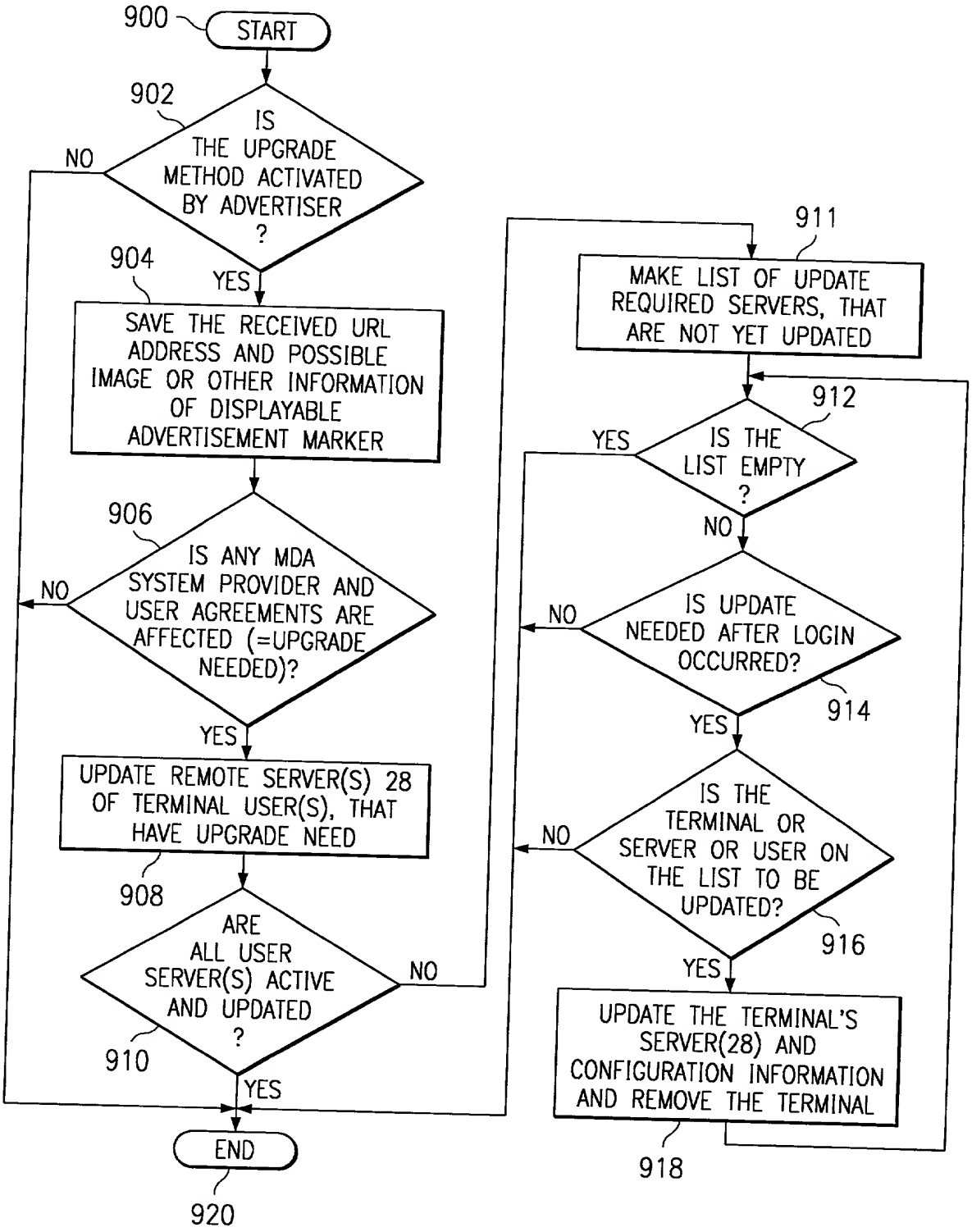

36
38
40
34
110
33
37
101
105
108
104
106
26
61
46
54
60
62
59
66
52
68a
68b
55
57
56
58
64
67
48
68
50
22
24
28
21
20
20a
20b

FIG. 17

FIG. 18


900
START
902
IS THE UPGRADE METHOD ACTIVATED BY ADVERTISER ?
NO
YES
904
SAVE THE RECEIVED URL ADDRESS AND POSSIBLE IMAGE OR OTHER INFORMATION OF DISPLAYABLE ADVERTISEMENT MARKER
906
IS ANY MDA SYSTEM PROVIDER AND USER AGREEMENTS ARE AFFECTED (=UPGRADE NEEDED)?
NO
YES
UPDATE REMOTE SERVER(S) 28 OF TERMINAL USER(S), THAT HAVE UPGRADE NEED
908
ARE ALL USER SERVER(S) ACTIVE AND UPDATED ?
NO
910
YES
END
920
911
MAKE LIST OF UPDATE REQUIRED SERVERS, THAT ARE NOT YET UPDATED
912
IS THE LIST EMPTY ?
YES
NO
IS UPDATE NEEDED AFTER LOGIN OCCURRED?
NO
914
YES
IS THE TERMINAL OR SERVER OR USER ON THE LIST TO BE UPDATED?
NO
916
YES
UPDATE THE TERMINAL'S SERVER(28) AND CONFIGURATION INFORMATION AND REMOVE THE TERMINAL
918